

# Sounding Rocket Fun

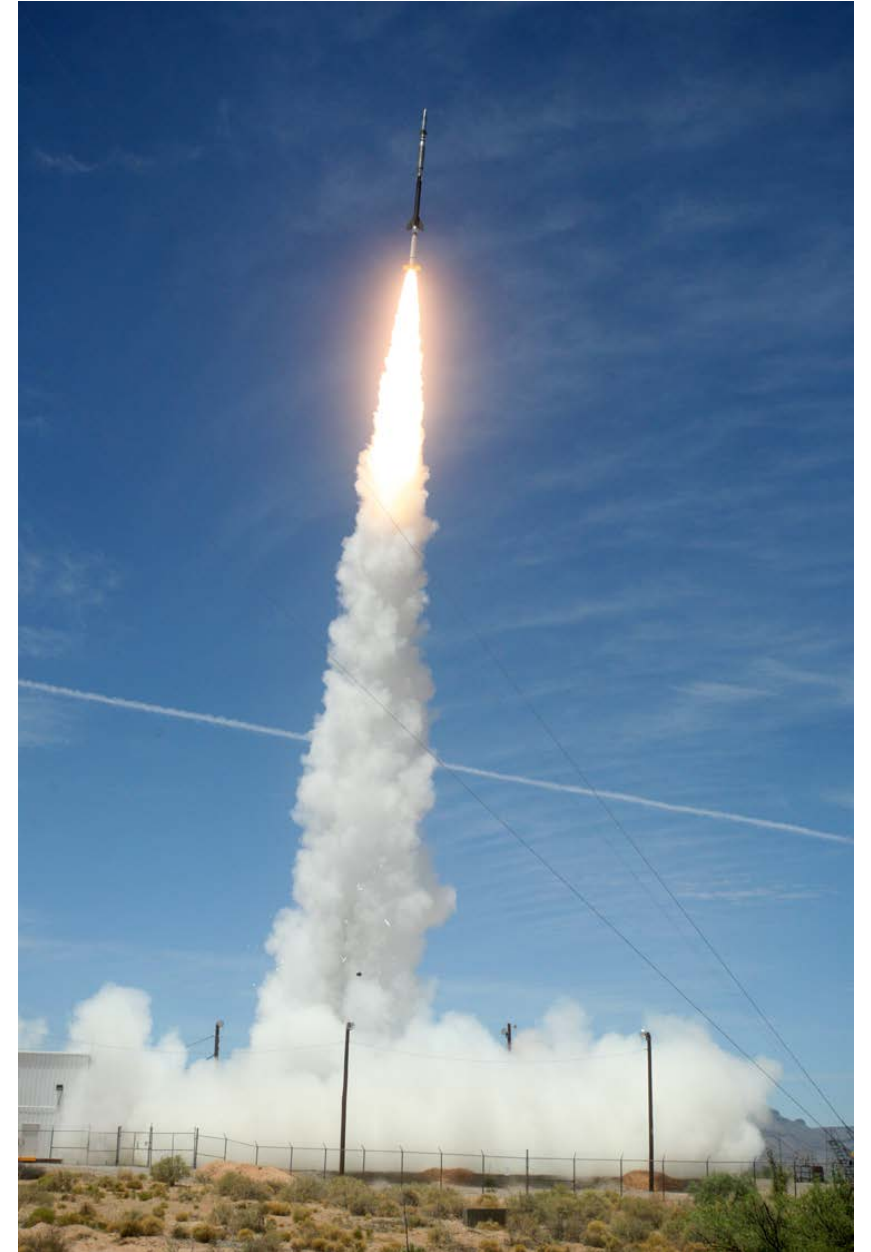
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Hi-C 2.1 Team – Amy Winebarger PI, MSFC



Marshall Space  
Flight Center



<https://www.nasa.gov/centers/marshall/news/hi-c-launches-to-study-suns-corona/index.html>

# Outline

- CLASP-2
  - Integration and Key Hardware
- WSMR operations overview
  - Packing up
  - Unpacking
  - Set up/Functional Testing
  - Sun Sensors and Heliostat
  - Vibration Tests
  - Rail
  - Launch !!!
  - Recovery

[https://www.nasa.gov/sites/default/files/thumbnails/image/190328-n-hb488-1036\\_002\\_0.jpg](https://www.nasa.gov/sites/default/files/thumbnails/image/190328-n-hb488-1036_002_0.jpg)





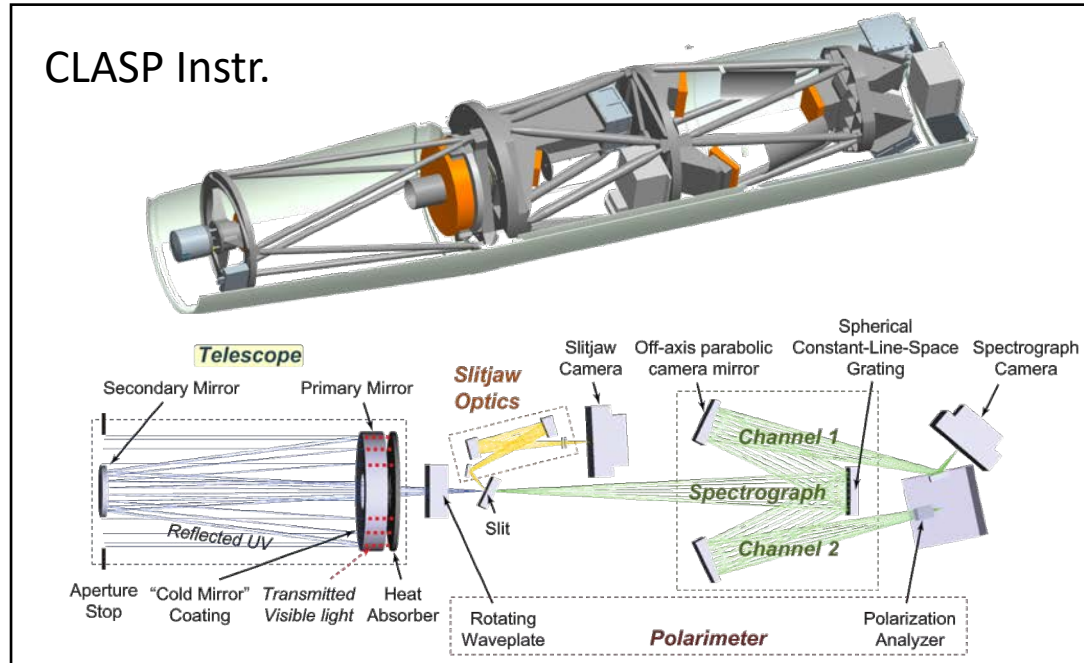
# CLASP-2 Instrument

- Instrument major components
  - Cassegrain telescope
  - slitjaw imaging system
  - dual-beam spectrograph
  - Polarimeter
- CLASP-2 is slightly different from diagram but mostly the same



CLASP-2 at NSSTC

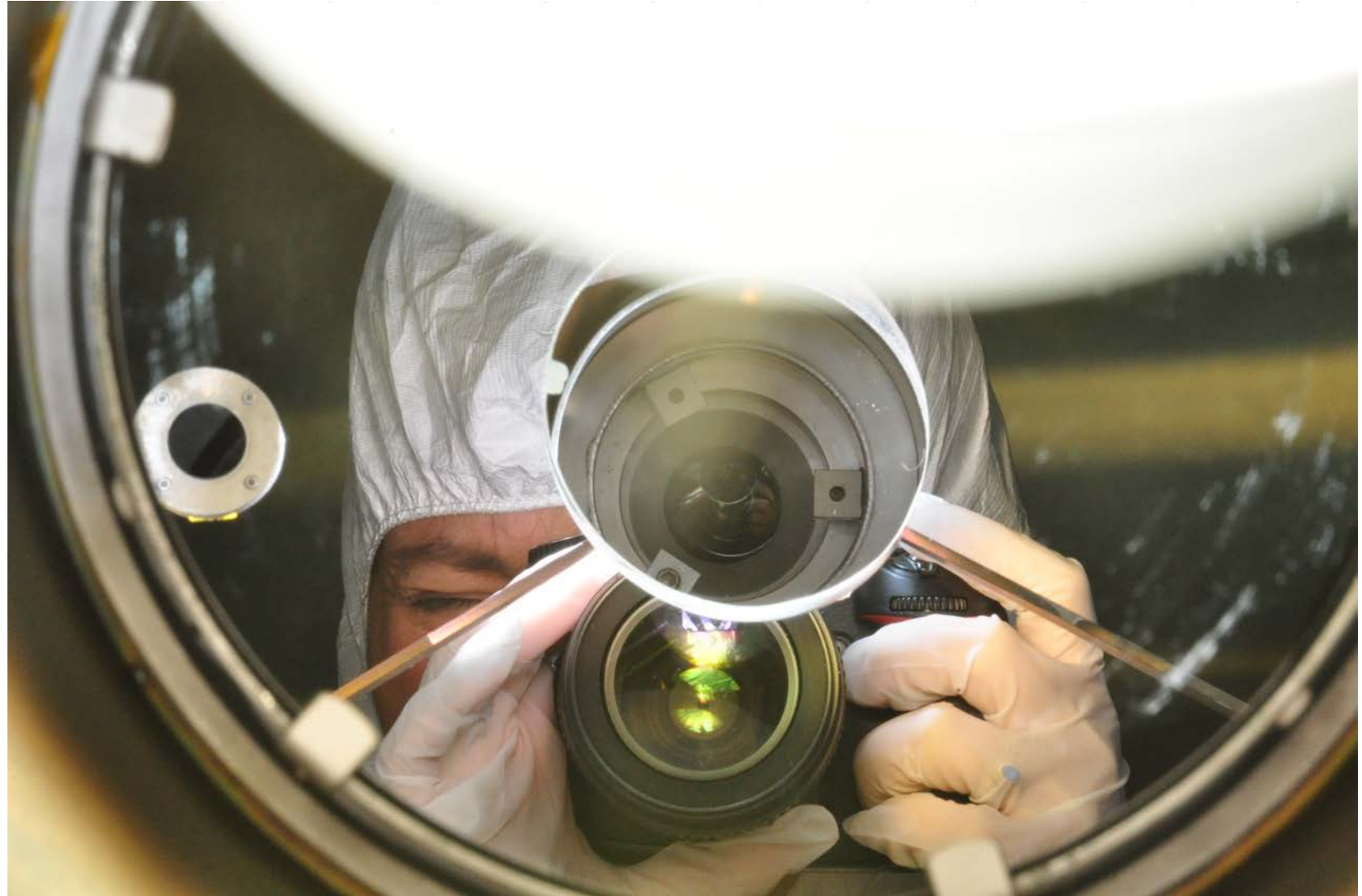
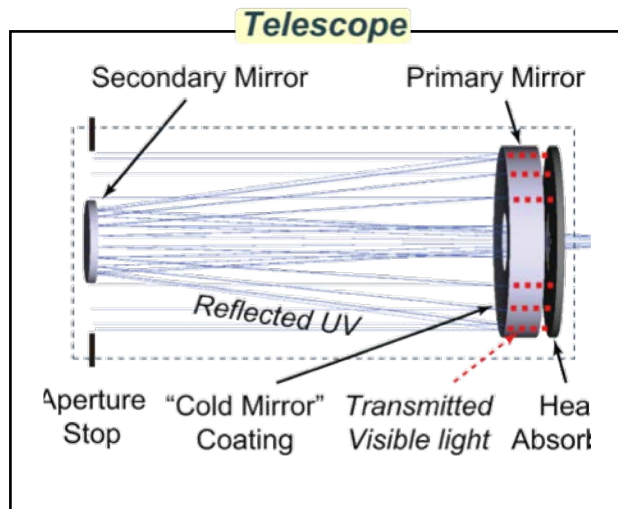
CLASP Instr.



Kano, R., Bando, T., Narukage, N., Ishikawa, R., Tsuneta, S., Katsukawa, Y., ... Carlsson, M. (2013). Chromospheric Lyman-alpha spectro-polarimeter (CLASP). *Space Telescopes and Instrumentation 2012: Ultraviolet to Gamma Ray*, 8443(September 2012), 84434F. <https://doi.org/10.1117/12.925991>

# Primary Mirror

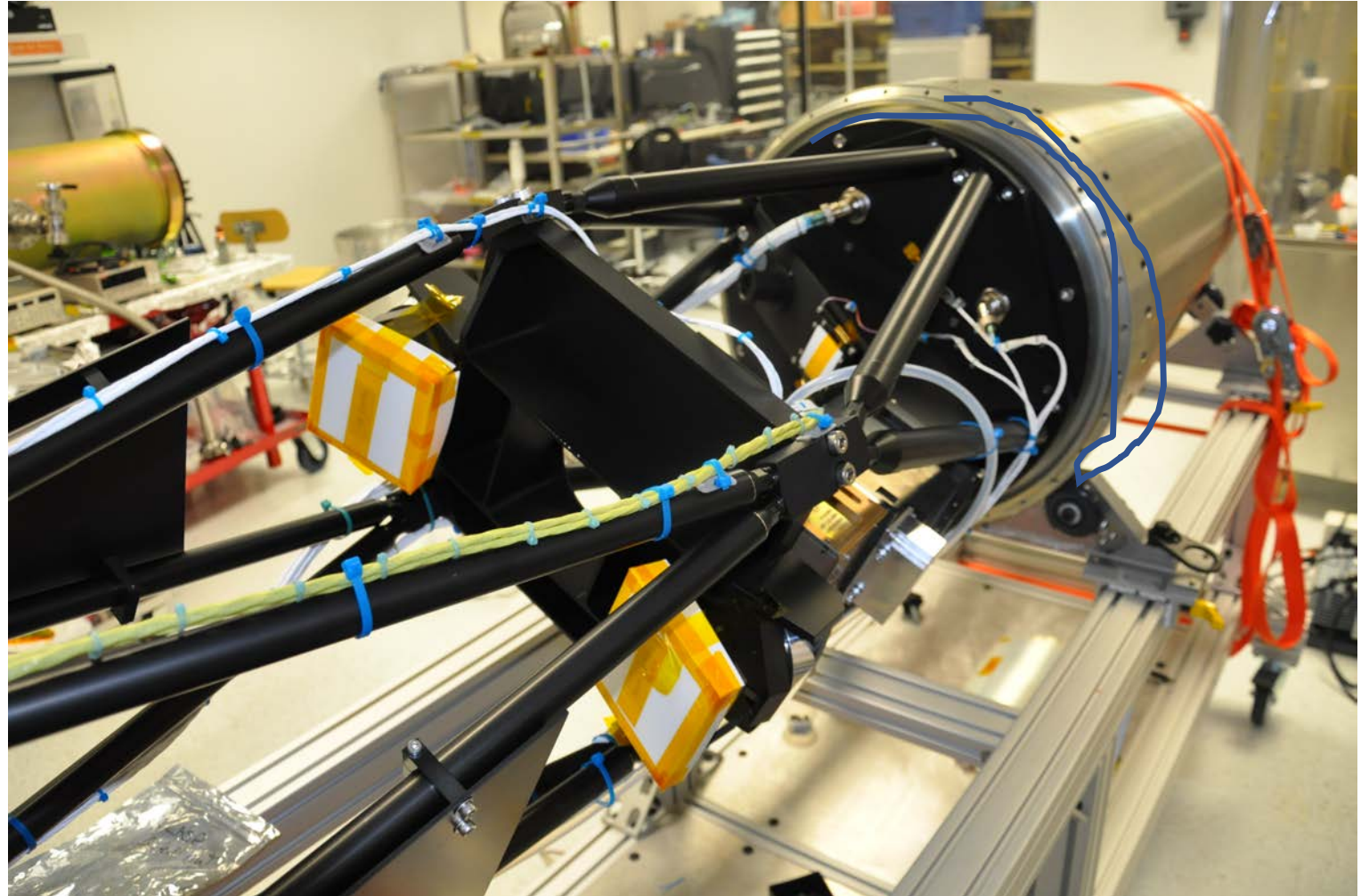
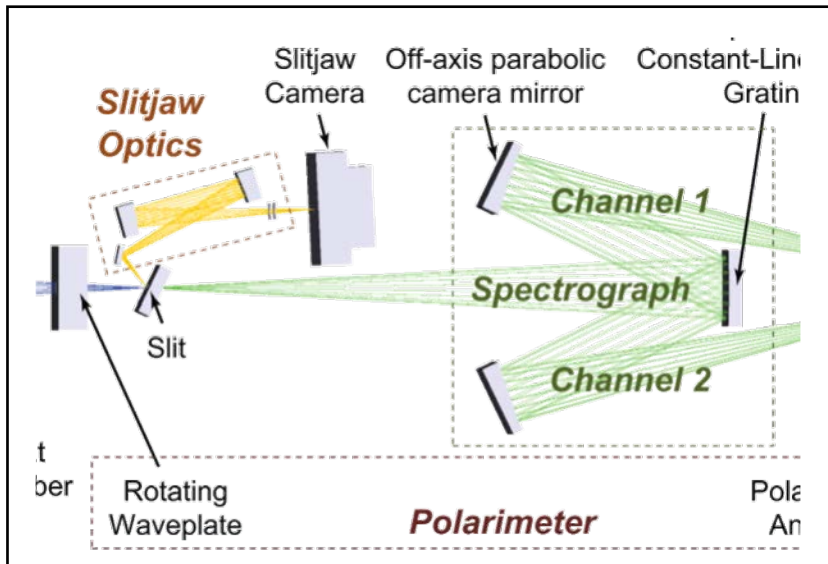
- Cold mirror
  - Narrowband multilayer coating
  - Reflects target wavelengths
  - Transparent to visible → heat absorber
- Secondary





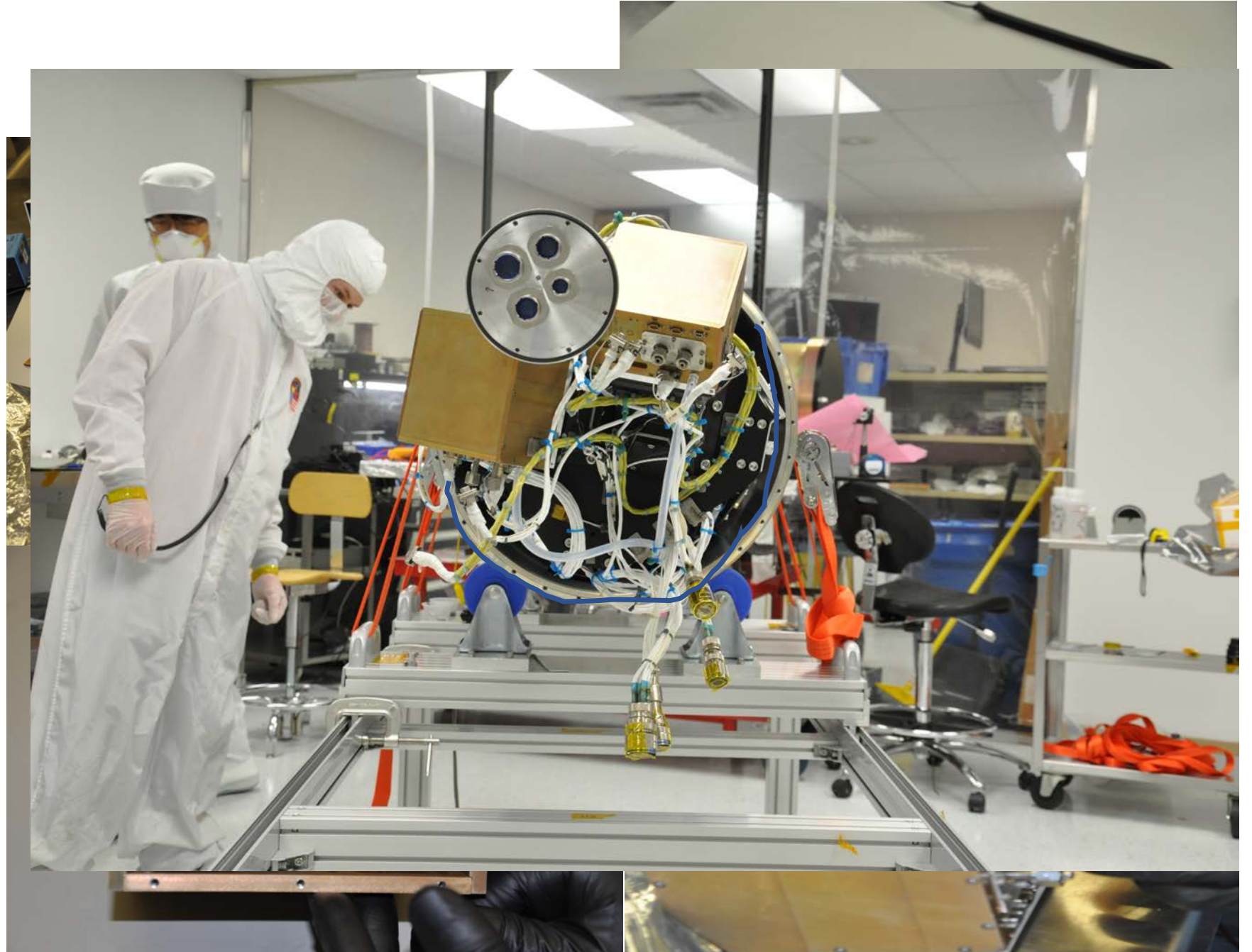
# Integration and CLASP Instrument

- Waveplate
- Slit & Slitjaw camera
- Spectrograph mirrors
  - Grating just off image



# Cameras

- 2 spectrograph cameras
- 1 slitjaw camera







YAAASS!!

Ready for WSMR!

# Packing





# Ship and Unpack



White Sand



Missile Range





# GSE Set up





# Functional Tests

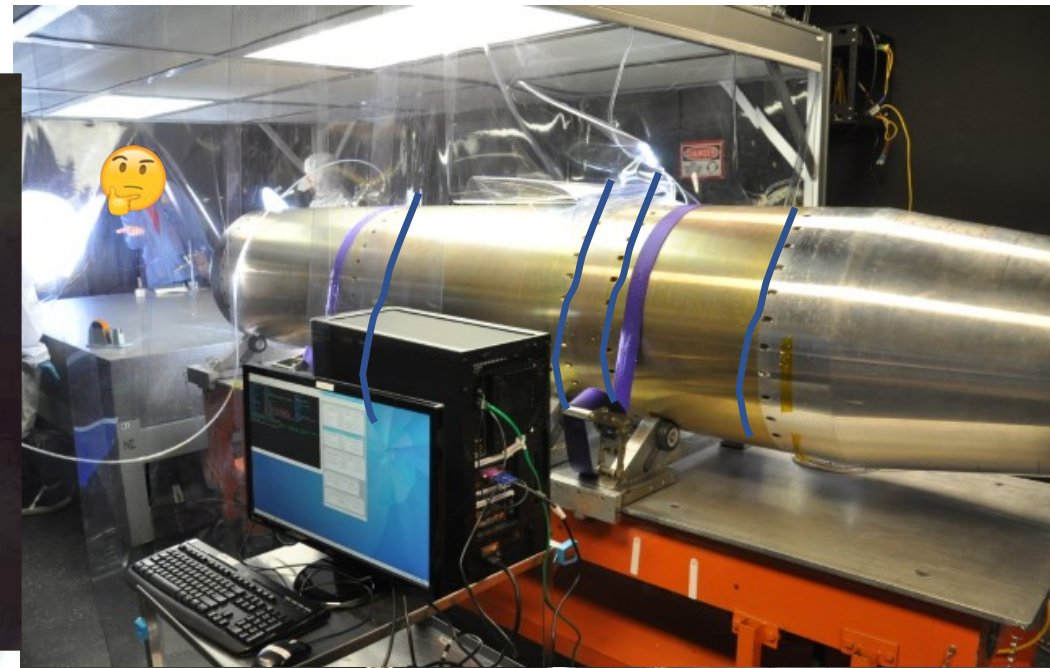


# Sun Sensors Install/Alignment



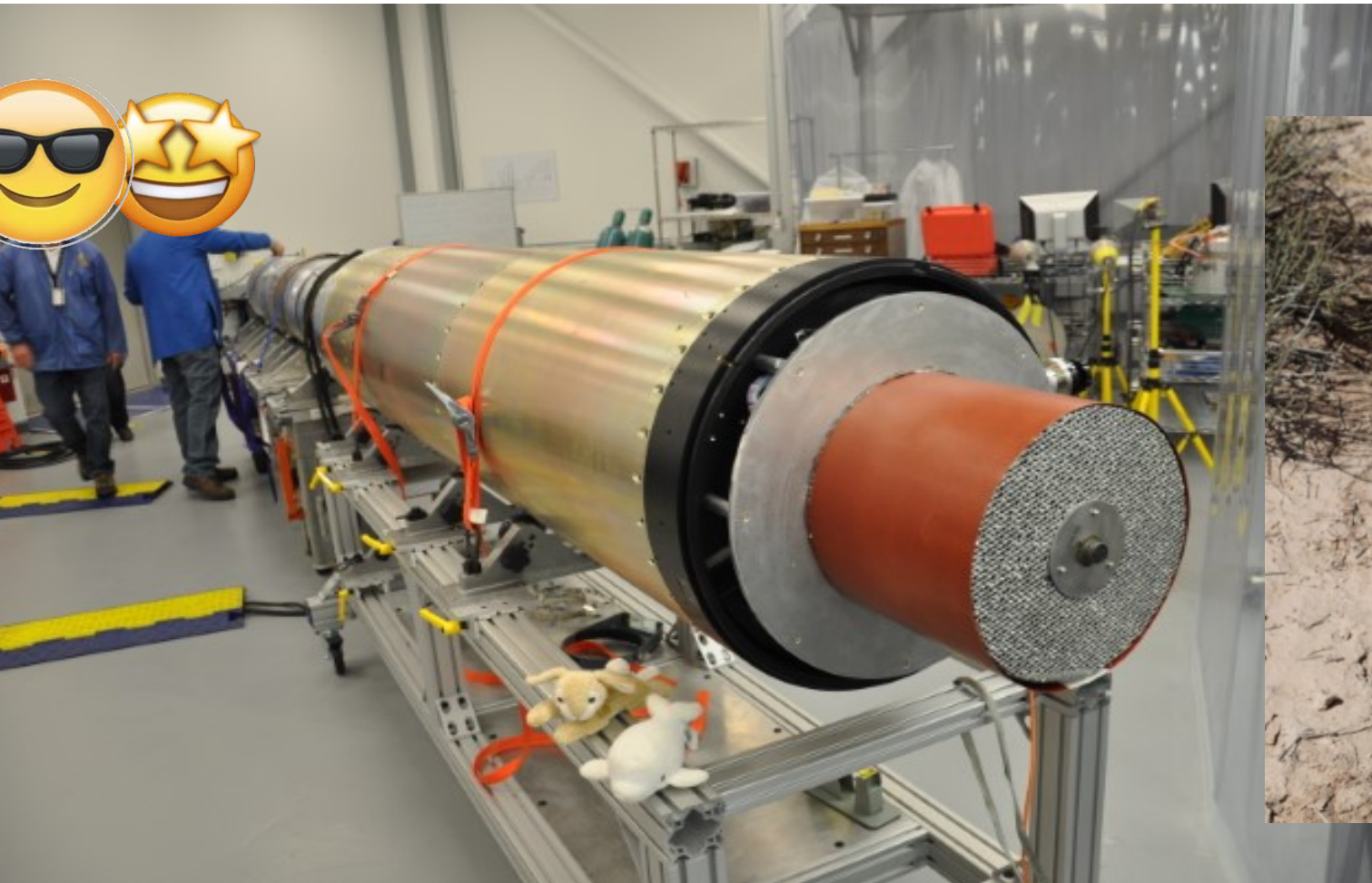


# Heliostat





# Crush Bumper



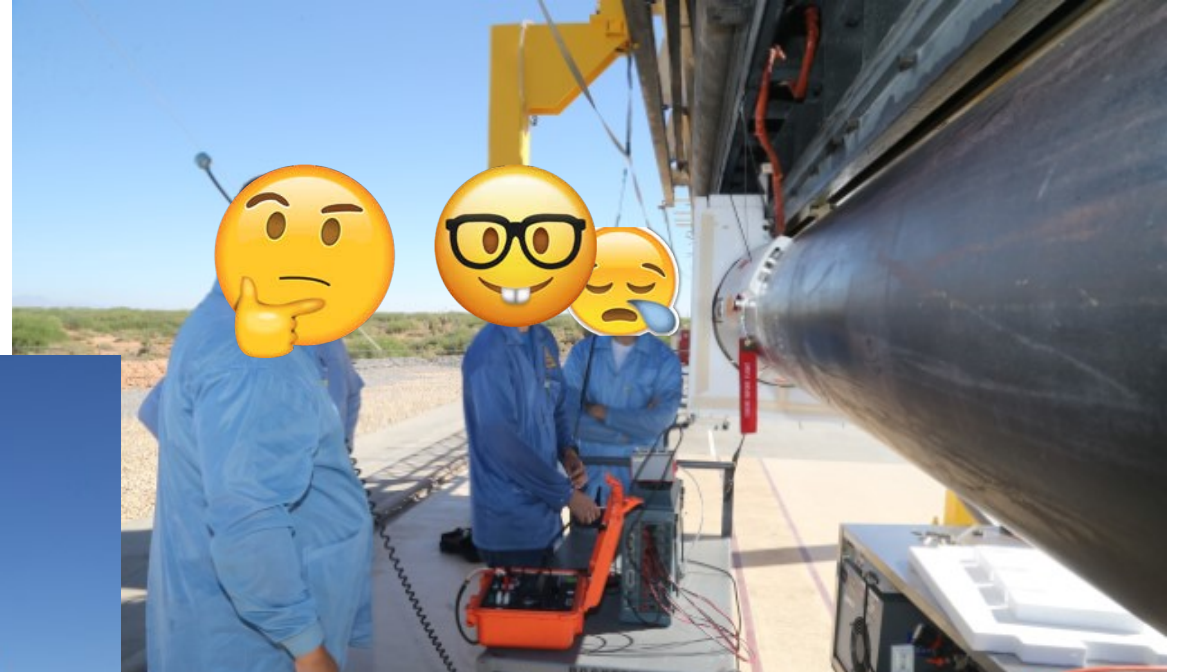


# Vibration Tests



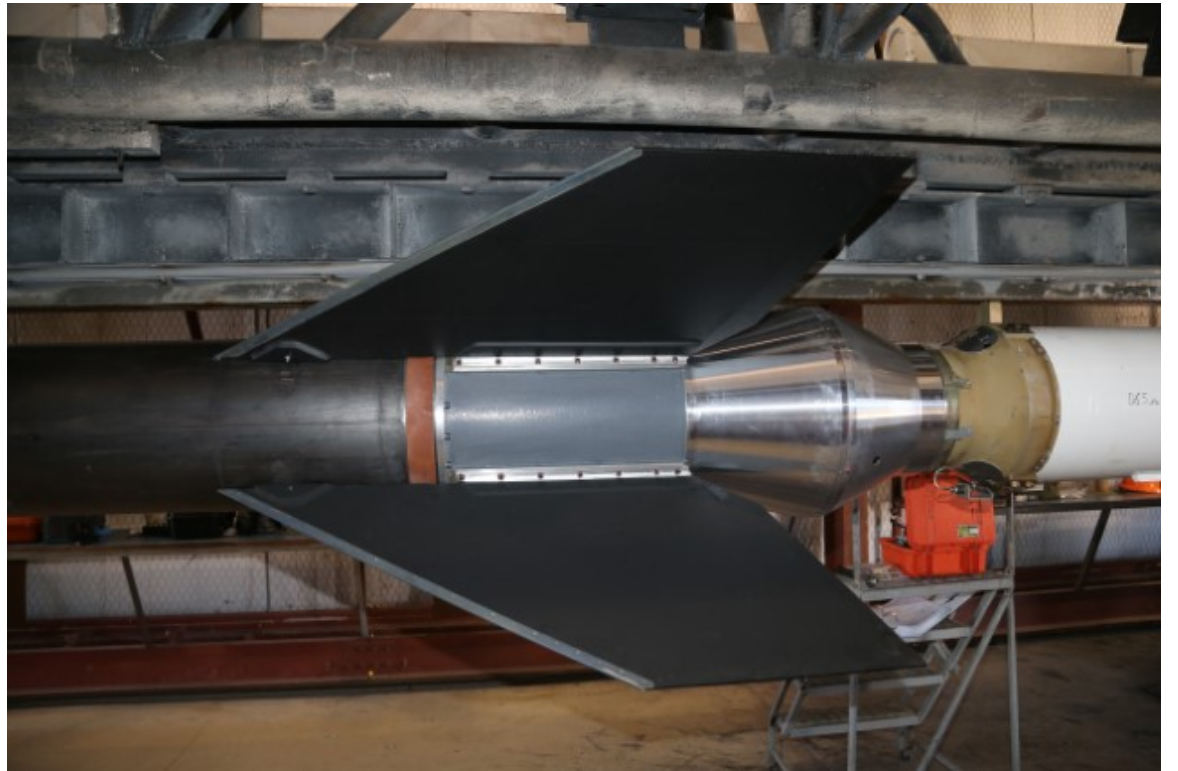


On the rail





# Rail house



# Launch 🚀



3,200 sq mi

<https://www.nasa.gov/centers/marshall/news/hi-c-launches-to-study-suns-corona/index.html>





# Recovery

